

A REVISION OF THE ORIBATID MITES OF JAPAN

II. THE FAMILY EUPHTHIRACARIDAE*

By

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Synopsis

AOKI, Jun-ichi (Institute of Environmental Science and Technology, Yokohama National University, Yokohama, Kanagawa 240, Japan): A revision of the oribatid mites of Japan. II. The family Euphthiracaridae. *Acta Arachnol.*, **29**: 9-23 (1980).

Five species of the family Euphthiracaridae are described. They include two new species, *Euphthiracarus foveolatus* and *E. takahashii*. *Microtritia minima* (BERLESE) is newly recorded from Japan.

As the members of the family Euphthiracaridae only two species were identified in our country. One of them is the most common species, *Rhysotritia ardua* (C.L. KOCH), and the other is *Microtritia tropica* MÄRKEL which was known in Japan by a single specimen collected at Kakeroma Island. Another species of the genus *Microtritia* has been known from various parts of Japan. It was ascertained that this species was quite identical with the European species, *M. minima* (BERLESE), and its redescription was given here based on the Japanese material. None of the species of the genus *Euphthiracarus* was reported from Japan, but two species of the genus were newly found from Oki Island and Miyake Island, respectively. These are both new species and described in the present paper.

* Partly supported by a Grant in Aid for Scientific Study.

Family EUPHTHIRACARIDAE JACOT, 1930

[Heso-irekodani Ka]

Diagnosis. (1) Genital, aggenital, anal and adanal plates completely fused to form a single plate, no suture separating them. (2) An interlocking triangle exists on the border between genital and anal areas. (3) Palp 3-segmented.

Elementary chaetotaxy. ntg: (14+14); g: (4+4), (5+5), (6+6), (7+7), (8+8) or (9+9); ag: (2+2); an: (3+3), rarely (4+4), (5+5) or (6+6); ad: (3+3). Monodactyle, tridactyle or sometimes bidactyle.

Distribution. Europe, S. America, N. America, Borneo and Japan.

Key to the genera of the family Euphthiracaridae

1. Interlocking triangle exists at the posterior end of anal area..... 2
—No interlocking triangle exists at the posterior end of anal area 3
2. Notogaster foveolate; an_3 as strong as adanal setae
..... *Euphthiracarus* EWING, 1917
—Notogaster smooth; an_3 far shorter and finer than adanal setae
..... *Brasiliotritia* MÄRKEL, 1964
3. Trochanter III and IV each with 1 seta; length of notogaster shorter than $400\ \mu$ *Microtritia* MÄRKEL, 1964
—Trochanter III and IV each with 2 setae; length of notogaster longer than $400\ \mu$ *Rhysotritia* MÄRKEL et MEYER, 1959

Genus *Euphthiracarus* EWING, 1917

[Heso-irekodani Zoku]

Euphthiracarus EWING, 1917, p. 125; JACOT, 1930, p. 248; 1938, p. 120; MÄRKEL, 1958, p. 486; 1964, p. 55; HAMMEN, 1959, p. 39; WALKER, 1964, p. 37.

Diagnosis. (1) Anogenital plates connected with each other by 2 interlocking triangles, the middle one and the posterior one. (2) Notogaster foveolate. (3) Bothridial scale lies under bothridium.

Elementary chaetotaxy. ntg: (14+14); g: (6+6), (7+7), (8+8) or (9+9); ag: (2+2); an: (3+3), rarely (4~6+4~6); ad: (3+3). The number of setae on trochanters I-IV: (0-1-2-2). Monodactyle or tridactyle.

Type-species. *Phthiracarus flavus* EWING, 1908.

Distribution. Europe, North America and Japan (new record).

Key to the Japanese species of the genus *Euphthiracarus*

1. Sensillus slightly thickened apically; aggenital setae subequal in length;
 RLN of notogastral setae 12~16; notogaster with large foveolae
 *Euphthiracarus foveolatus* sp. n.
- Sensillus distinctly thickened apically; aggenital setae unequal in length;
 RLN of notogastral setae 15~20; notogaster with small foveolae.....
 *Euphthiracarus takahashii* sp. n.

***Euphthiracarus foveolatus* sp. n.**

[Oki-irekodani]

(Fig. 1)

Diagnosis. (1) Sensillus with apical portion slightly thickened and distinctly barbed. (2) Notogaster with distinct, large foveolae. (3) Aggenital setae ag_1 and ag_2 almost equal in length. (4) Seven pairs of genital setae. (5) Legs

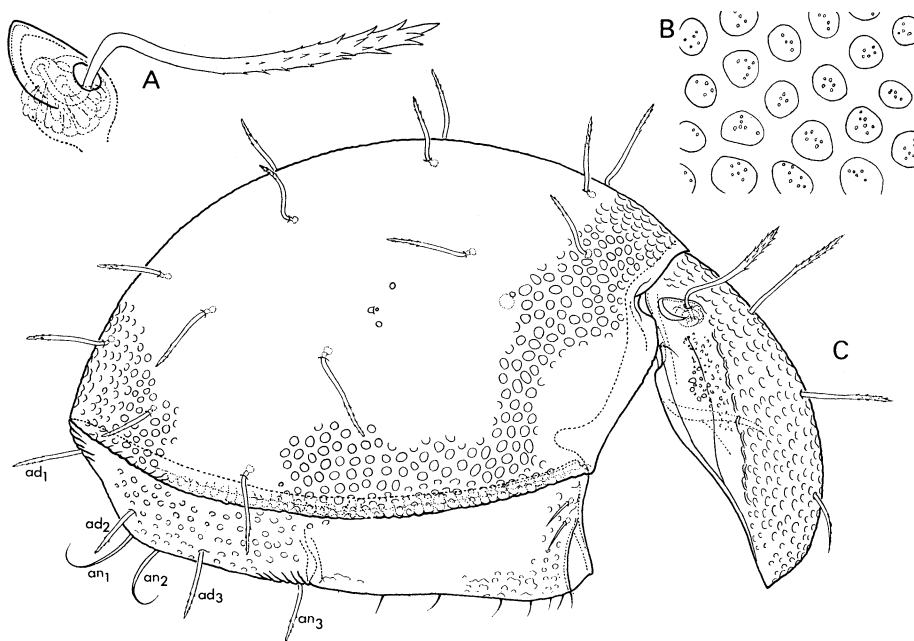


Fig. 1. *Euphthiracarus foveolatus* sp. n. A: Sensillus and bothridium.
 B: Surface sculpture on notogaster. C: Lateral.

tridactyle.

Measurement. Notogaster (L) 520 μ , notogaster (H) 325 μ , aspis (L) 280 μ .

Elementary chaetotaxy. ntg: (14+14); g: (7+7); ag: (2+2); an: (3+3); ad: (3+3). Heterotridactyle.

Description. ASPIS. Two lateral carinae on each side; the upper one strong and irregular, the lower one weak. Surface of aspis between the upper carinae sculptured with foveolae. Outside the carinae the surface smooth, but bearing partly granules of irregular shapes. Apical half of sensillus weakly thickened, bearing short, but distinct barbs which become progressively stronger toward the tip of sensillus (Fig. 1-A). Bothridial scale under and posterior to bothridium, showing a rounded margin. Exobothridial seta short and fine. The remaining prodorsal setae thick and barbed; lamellar seta distinctly shorter than interlamellar seta; their relative length to notogaster (RLN): *ro* 11.5, *la* 13.5 and *in* 19.2. Rim of aspis distinct, suddenly narrowed anteriorly.—NOTOGASTER. The whole part of notogaster clearly sculptured with large foveolae, which are especially large on the anterolateral sides of notogaster; the foveolae not completely circular, but somewhat irregular in shape; each foveola contains 4~7 small granules (Fig. 1-B). Fourteen pairs of notogastral setae rather short, strong, winding near base and distinctly barbed apically; their RLN: 12.1~15.6.—GENITO-ANAL REGION. Genito-aggenital region almost smooth, only partly with foveolae or irregular sculpture. Seven pairs of genital setae short and fine (RLN of the longest one: 4.6). Two aggenital setae on each side comparatively thick and subequal in length to each other (RLN: 5.0~6.2). Ano-adanal region sculptured, but the foveolae not so large and clear as on notogaster. Adanal setae *ad*₁~*ad*₃ and anal seta *an*₃ thick and weakly barbed apically (RLN: 8.9~9.6); *an*₁ and *an*₂ glabrous, having a fine tip which strongly curved forward in the case of *an*₂ and backward in the case of *an*₁.

Type-specimen. HOLOTYPE (NSMT-Ac 9138, on slide): Saigo-cho in Oki Island, Japan, 28-X-1976, J. AOKI and H. HARADA from litter of *Cryptomeria japonica* (QM 7).

Distribution. Japan (Oki Island).

Remarks. The present new species is related to *Euphthiracarus cribarius* (BERLESE, 1904), *E. monodactylus* (WILLMANN, 1919), *E. reticulatus alpinus* MÄRKEL, 1964, and *E. intermedius* (FEIDER et SUCIU, 1958). However, it is distinguishable from *E. cribarius* by the aggenital setae of equal length and 7 pairs of genital setae, from *E. monodactylus* by the tridactyle legs, from *E.*

reticulatus alpinus by the foveolate notogaster and the shorter notogastral setae, and from *E. intermedius* by the presence of 2 lateral carinae on each side of aspis and the shorter notogastral setae.

***Euphthiracarus takahashii* sp. n.**

[Takahashi-irekodani]

(Fig. 2)

Diagnosis. (1) Sensillus clavate, with strong spines at tip. (2) Notogaster with small foveolae. (3) Aggenital setae ag_2 distinctly longer than ag_1 . (4) Seven to eight pairs of genital setae. (5) Legs tridactyle.

Measurement. Notogaster 590–630 μ , notogaster (H) 360–390 μ , aspis (L) 290–310 μ .

Elementary chaetotaxy. ntg: (14+14); g: (8+8), (7+6), (8+9) or (10+8); ag: (2+2); an: (3+3), abnormally (3+4); ad: (3+3). Heterotridactyle.

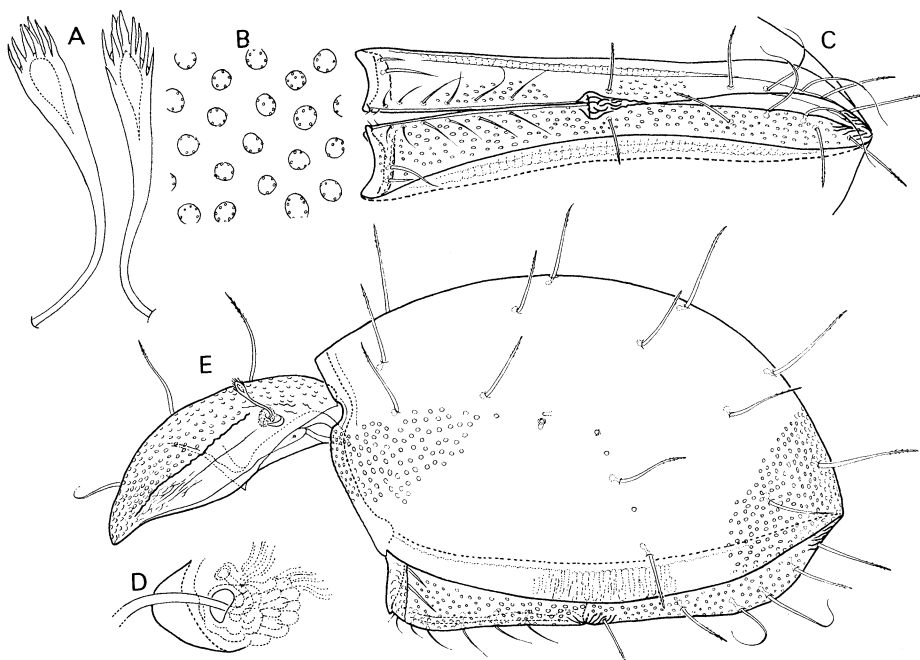


Fig. 2. *Euphthiracarus takahashii* sp. n. A: Sensilli. B: Surface sculpture on notogaster. C: Genito-anal region. D: Bothridium and bothridial scale. E: Lateral.

Description. ASPIS. Two lateral carinae on each side; the upper one strong, while the lower one is weak, becoming anteriorly an irregular network-like structure. The median surface of aspis between the upper carinae distinctly foveolate; the foveolae becoming somewhat larger on the anterior part. Sensillus with a distinctly dilated head bearing strong apical spines (Fig. 2-A). Bothridial scale situated under and posterior to bothridium. Exobothridial seta very minute, hardly visible. Interlamellar and lamellar setae erect and barbed on their apical half, nearly equal in length. Rostral seta smooth, the fine tip being curled. RLN (relative length to notogaster) of prodorsal setae: *ro* 11.5, *la* 19.0 and *in* 20.9.—NOTOGASTER. The surface sculptured with foveolae which are small and not so clear; 4~8 small granules arranged along margin of each foveola (Fig. 2-B). Fourteen pairs of notogastral setae rather long, weakly barbed apically; they are longer and more slender than those of *E. foveolatus*; their RLN: 15.0~19.6.—GENITO-ANAL REGION. Genito-aggenital as well as ano-adanal region wholly foveolate. The number of genital setae much variable: each genital plate provided with 6~10 setae, most frequently with 8 setae; among them the posterior 4 considerably long (RLN: 7.5). Two aggenital setae on each side, being far thicker than genital ones, unequal in length, *ag*₂ about twice as long as *ag*₁. Adanal setae *ad*₁~*ad*₃ (RLN: 11.5~13.8) and anal seta *an*₃ (RLN: 9.9) thick and weakly barbed apically; *an*₁ (RLN: 15.8) and *an*₂ (RLN: 11.5) glabrous, long and whip-like; the tip of *an*₁ strongly curving backward and that of *an*₂ forward.

Type-series. HOLOTYPE (NSMT-Ac 9139, in spirit): Tairoh-ike, Miyake-jima Island, Japan, 27-IX-1977, T. TAKAHASHI, from litter of *Castanopsis cuspidata* var. *sieboldii* forest (QM45).—PARATYPES: 3 exs.: Mt. Oyama in Miyake-jima Island, Japan, 28-V-1977, T. TAKAHASHI, from litter of *Castanopsis*.

Distribution. Japan (Miyake-jima Island).

Etymology. The species *takahashii* was named after Mr. Tohru TAKAHASHI (Teacher in Tomioka High School, Yokohama) who collected the specimens and kindly offered them for my study.

Remarks. The present new species is most closely related to *Euphthiracarus cribarius* (BERLESE, 1904), but it is easily distinguishable from the latter by the sensilli with a distinctly dilated head.

Genus *Microtrititia* MÄRKEL, 1964

[Chibi-irekodani Zoku]

Microtrititia MÄRKEL, 1964, p. 45.

Diagnosis. (1) Only one interlocking triangle exists in the middle part of genito-anal area. (2) Notogaster smooth. (3) Bothridial scale lies above bothridium. (4) Four or five pairs of genital setae.

Elementary chaetotaxy. ntg: (14+14); g: (4+4) or (5+5); ag: (0+0), (1+1), (2+2) or (3+3); an: (2+2); ad: (3+3). The number of setae on trochanter I~IV: (1-1-1-1). Monodactyle.

Type-species. *Phthiracarus minimus* BERLESE, 1904.

Distribution. Europe, Mongolia, Peru, Brasil, Easter Is. and Japan.

Key to the Japanese species of the genus *Microtrititia*

1. Sensillus blunt at tip; 4 pairs of genital setae...*M. minima* (BERLESE, 1904)
—Sensillus pointed at tip; 5 pairs of genital setas....*M. tropica* MÄRKEL, 1964

Microtrititia minima (BERLESE, 1904)

[Kantôchibi-irekodani]

(Fig. 3)

Phthiracarus minimus BERLESE, 1904, p. 22.

Pseudotrititia minima: SELLNICK, 1928, p. 39; WILLMANN, 1931, p. 195, fig. 364; MÄRKEL, 1958, p. 488, figs. 3d, 8; HAMMEN, 1959, p. 37.

Trititia (Pseudotrititia) minuta WILLMANN, 1919, p. 552, fig. 2; SELLNICK, 1923, p. 21, figs. 11, 12, 34.

Microtrititia minima: MÄRKEL, 1964, p. 46, figs. 10a-10e.

Diagnosis. (1) Sensillus clavate, bearing a cap-like appendage at tip. (2) Genital plates with 4 pairs of setae. (3) Anal setae invisible, only their insertion pores are discernible.

Measurement. Notogaster (L) 290-370 μ , notogaster (H) 200-240 μ , aspis (L) 192-220 μ .

Elementary chaetotaxy. ntg: (14+14); g: (4+4); ag: (1+1); an: (2+2); ad: (3+3). Monodactyle.

Description. ASPIS. A distinct lateral carina on each side. Rostral, lamellar and interlamellar setae very fine and weak; rostral setae inserted close to each other; ratio among mutual distances: ro-ro: la-la: in-in=1:3:8. Sensillus

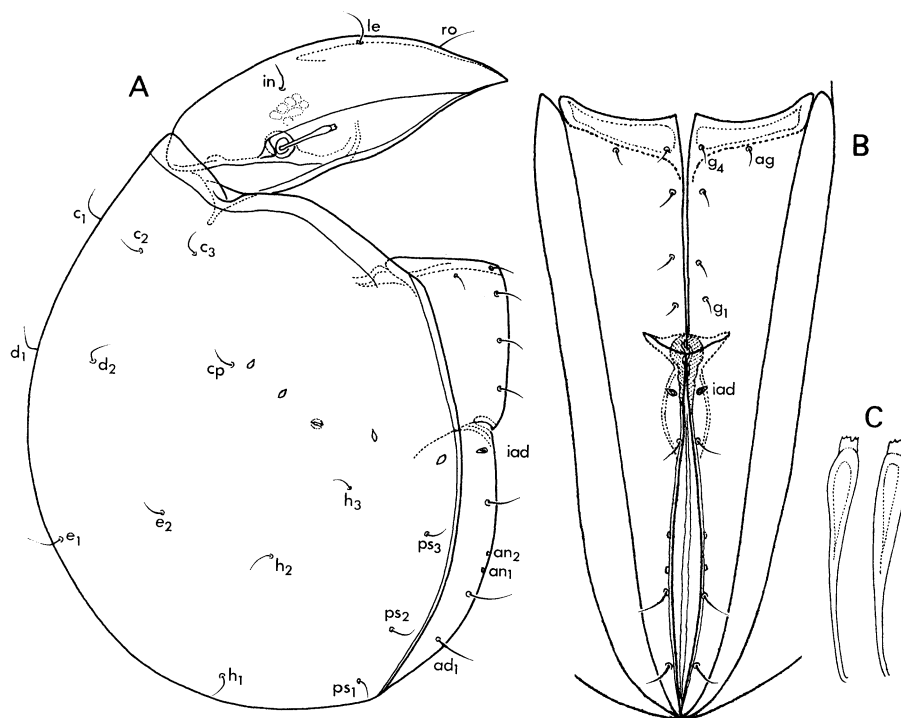


Fig. 3. *Microtritia minima* (BERLESE). A: Lateral. B: Genito-anal region. C: Sensilli.

clavate, bearing apically a cap-like appendage of mostly rectangular shape (Fig. 3-C). Bothridial scale triangular, being situated behind and above bothridium. —NOTOGASTER. Fourteen pairs of fine, short setae found on notogaster. Outside (lateral to) the seta c_p on each side 4 lyrifissures and 1 gland opening are visible.—GENITO-ANAL REGION (Fig. 3-B). Interlocking triangle large, the anterior part being covered by a transverse flap. Genital plate anteriorly with a broad thickening. One of 4 genital setae inserted on the thickening and 1 aggenital seta located near the posterior margin of the thickening. A pair of distinct adanal fissures (*iad*) situated near the posterior part of interlocking triangle. Adanal setae ad_2 inserted far closer to ad_1 than to ad_3 . Between ad_2 and ad_3 found 2 pairs of setal pores for anal setae, but setae are invisible.

Type-locality. Florence.

Collecting data in Japan. JA465 (3 exs.), JA1127 (2 exs.), JA1194 (1 ex.),

JA2117 (1 ex.), QM7 (3 exs.)

Distribution. Europe and Japan (Tokyo, Chiba-ken, Yamanashi-ken and Okinoshima).

Remarks. The Japanese specimens are mostly well in accord with the description of *M. minima* by MÄRKEL (1964). They have, however, only one pair of aggenital setae (2 pairs on the German specimens) and the anal setal pores located closer to ad_2 than to ad_3 (they are closer to ad_3 on the German specimens).

***Microtritia tropica* MÄRKEL, 1964**

[Chibi-irekodani]

(Fig. 4)

Microtritia tropica MÄRKEL, 1964, p. 48, figs. 11a-11e; AOKI, 1977a, p. 91, figs. 10-12.

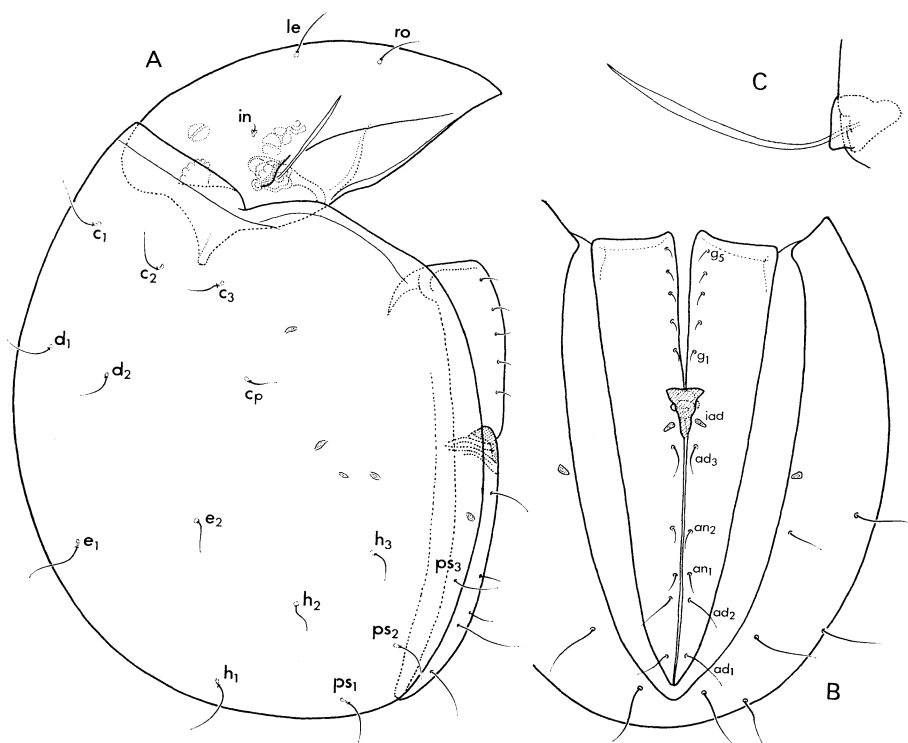


Fig. 4. *Microtritia tropica* MÄRKEL. A: Lateral. B: Ventral view of hysterosoma. C: Sensillus and bothridium.

Diagnosis. (1) Sensillus slender, pointer at tip. (2) Genital plates with 5 pairs of setae. (3) Two pairs of anal setae visible.

Measurement. Notogaster (L) 290 μ , notogaster (H) 230 μ , aspis (L) 185 μ .

Elementary chaetotaxy. ntg: (14+14); g: (5+5); ag: (0+0); an: (2+2); ad: (3+3). Monodactyle.

Description. ASPIS. Aspis strongly convex, with a lateral carina on each side. Rostral and lamellar setae fine. Mutual distance *ro-ro* somewhat longer than *la-la*. Interlamellar seta extremely minute. Sensillus slightly thickened toward apical direction, but then pointed at tip (Fig. 4-C). Bothridial scale is a scalene triangle.—NOTOGASTER. Fourteen pairs of notogastral setae fine and weak. Four pairs of lyrifissures and a pair of gland opening found laterally.—GENITO-ANAL REGION (Fig. 4-B). Genital plate provided with 5 setae almost equally spaced. No aggenital setae discernible. Ano-adanal plate bearing 2 short anal setae and 3 long adanal setae. Distance $an_2-ad_3 > ad_1-ad_2 > an_1-an_2 > ad_2-an_1$. A distinct adanal fissure (*iad*) situated on each side near the posterior end of interlocking triangle.

Type-locality. Tingo Maria, Peru.

Collecting data in Japan. JA1474 (1 ex.).

Distribution. Peru, Easter Island and Japan (Kakeroma Is.). A subspecies is known from Borneo.

Remarks. The sensilli of the Japanese material are quite smooth and not minutely barbed as in the materials from Peru and Easter Island. A subspecies from N. Borneo, *M. tropica dusan* RAMSAY et SHEALS, 1969, has also smooth sensilli, but the Japanese material can not be identical with the Borneo subspecies, because the Japanese one has minute interlamellar setae situated above the bothridia and the sensilli pointed at tip, which are the characters of *M. tropica tropica* and not those of *M. tropica dusan*.

Genus *Rhysotritia* MÄRKEL et MEYER, 1959

[Himeheso-irekodani Zoku]

Rhysotritia MÄRKEL et MEYER, 1959, p. 329; MÄRKEL, 1964, p. 54.

Diagnosis. (1) Only one interlocking triangle exists in the middle part of anogenital area. (2) Notogaster smooth or with fine granules. (3) Bothridial scale lies above bothridium. (4) Genital area with 8-9 pairs of genital setae.

Elementary chaetotaxy. ntg: (14+14); g: (8+8) or (9+9); ag: (2+2); an:

(3+3); ad: (3+3). Monodactyle, bidactyle or tridactyle.

Type-species. *Hoplophora ardua* C.L. KOCH, 1841.

Distribution. Europe, South America, North America, Rurutu, Tahiti, Nepal Himalaya, Java and Japan.

***Rhysotritia ardua* (C.L. KOCH, 1841)**

[Himeheso-irekodani]

(Fig. 5)

Hoplophora ardua C.L. KOCH, 1841, fasc. 32(15).

Tritia ardua: SELLNICK, 1923, p. 12, figs. 1, 12, 23, 24.

Oribotritia ardua: SELLNICK, 1928, p. 39.

Pseudotritia ardua: JACOT, 1930, p. 243, pl. 38, figs. 44-51; 1933, p. 255; MÄRKEL, 1958, p. 486, fig. 5; HAMMEN, 1952, p. 126; 1959, p. 36; AOKI, 1958, p. 172, fig. 2; 1977b, p. 186, fig.

Rhysotritia ardua: MÄRKEL et MEYER, 1959, p. 329; MÄRKEL, 1964, p. 59, figs. 15a-15d; LIONS, 1964, p. 41; PÉREZ-IÑIGO, 1968, p. 212.

Oribotritia loricata: WILLMANN, 1931, p. 194, figs. 358, 359.

Phthiracarus canetrinii MICHAEL, 1898, p. 81; BERLESE, 1913, p. 55.

Diagnosis. (1) Aspis with a single lateral carina on each side. (2) Notogastral setae weakly or strongly barbed. (3) The number of claws on legs I-IV much variable.

Measurement. Notogaster (L) 400-600 μ , notogaster (H) 250-410 μ , aspis (L) 210-300 μ .

Elementary chaetotaxy. ntg: (14+14); g: (8+8), (9+9), rarely (10+9); ag: (2+2); an: (3+3); ad: (3+3).

Description (Based on the material from Mt. Takao, Tokyo [JA26]: Figs. 5-C~F). ASPIS. 270-285 μ long. A single lateral carina on each side; it terminates posteriorly in front of bothridium; the part along and under the carina somewhat darker than the remaining part of aspis. Anterior part of aspis bearing minute granules. Sensillus with a distinctly dilated head provided with many strong barbs (Fig. 5-C and D). Rostral seta nearly straight, very weakly barbed. Lamellar and interlamellar setae thick and strongly barbed on the apical half; *la* about 1.2 \times and *in* 2 \times as long as *ro*; mutual distance *ro-ro* < *la-la* < *in-in*. Exobothridial seta extremely small.—NOTOGASTER. 535-600 μ long and 360-405 μ high. The ratio length/height of notogaster mostly 1.45~1.50. Notogastral surface very finely punctured. Fourteen pairs of notogastral setae

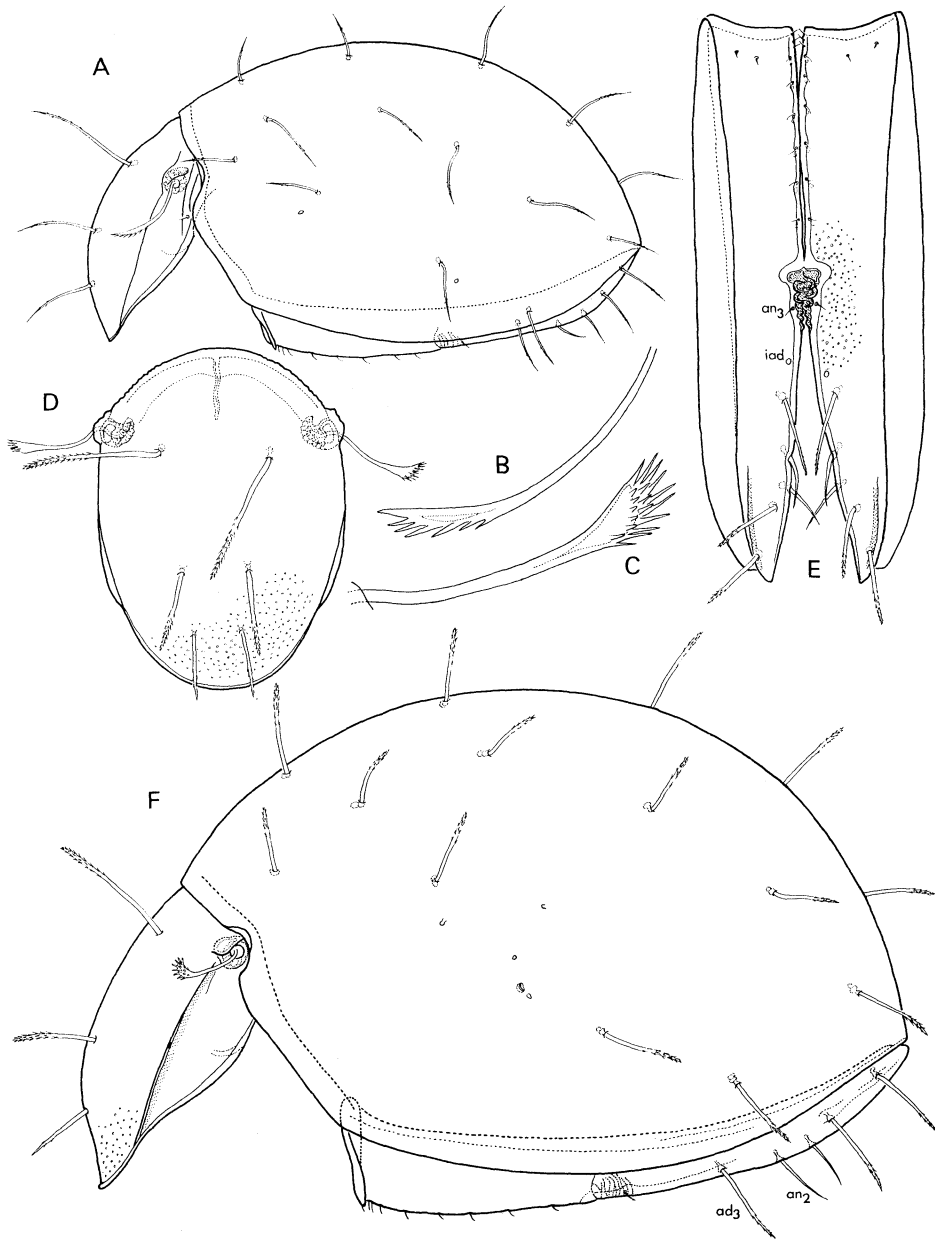


Fig. 5. *Rhyssotritia ardua* (C.L. KOCH). A-B: A specimen from the cold-temperate zone of Japan. C-F: A specimen from the warm-temperate zone of Japan. A: Lateral. B: Sensillus. C: Sensillus. D: Aspis in dorsal view. E: Genito-anal region. F: Lateral.

strong, being distinctly barbed on the apical half and almost of the same thickness throughout their length.—GENITO-ANAL REGION. Nine pairs of genital setae short and fine, among which the anteriormost 3 pairs inserted close together. Two pairs of aggenital setae also minute. Anal setae an_1 and an_2 rather strong, glabrous and pointed at tip; an_3 short and fine, only a little stronger than genital setae, being situated close to and outside interlocking triangle. Adanal setae $ad_1 \sim ad_3$ thick and barbed apically, but not so strongly as notogastral setae; they are $1.6 \sim 1.7 \times$ as long as anal setae an_1 and an_2 . A round pore (iad) located between an_3 and ad_3 . A sclerotized internal ridge found outside ad_1 and ad_2 . Minute granules covering all the surface of ano-genital plates.—LEGS. Leg I bidactyle, while legs II~IV are tridactyle. Leg I lacking in paraxial lateral claw.

Variation. The specimens from the northern part of Japan [JA1131] (Figs. 5-A and B) are fairly different from the specimens described above in the following points; (1) All the legs monodactyle. (2) Body smaller (notogaster $400\text{--}480\ \mu$ long) and lighter in color. (3) Notogastral setae thinner, pointed at tip and only weakly barbed. (4) Sensillus with a weakly dilated head. (5) Aspis and ano-genital plates without granules.

Type-locality. Germany.

Collecting data in Japan. [Specimens with bidactyle legs I and tridactyle legs II~IV]: JA18 (3 exs.), JA22 (2 exs.), JA26 (9 exs.), JA28 (6 exs.), JA49 (1 ex.), JA60 (4 exs.), JA85 (3 exs.), JA90 (7 exs.), JA93 (11 exs.), JA109 (1 ex.), JA149 (4 exs.), JA152 (4 exs.), JA153 (6 exs.), JA181-183 (10 exs.), JA458 (4 exs.), JA466 (4 exs.), JA552 (2 exs.), JA794 (17 exs.), JA1088 (1 ex.), JA1089 (2 exs.), JA1191 (1 ex.), JA1270 (2 exs.), JA1281 (1 ex.). [Specimens with monodactyle legs I~IV]: JA145 (1 ex.), JA270 (50 exs.), JA271 (1 ex.), JA407 (1 ex.), JA417 (2 exs.), JA551 (1 ex.), JA575 (1 ex.), JA606 (1 ex.), JA772 (4 exs.), JA1131 (4 exs.).

Distribution. Europe, North America, Canada, Tahiti and Japan.

Remarks. It is well known that the present species shows strong variabilities in body size, in shape of sensilli and in the number of claws. As it was studied by JACOT (1930, 1933) and LIONS (1964), the variety in the number of claws is most striking and interesting. In the present paper I described two different types of species, namely a robust type (with bidactyle legs I and tridactyle legs II-IV) and a slender type (with monodactyle legs I-IV). The former type seems to be distributed mostly in the warm-temperate zone and the latter type in the cold-temperate zone of Japan. Though not described here, I found

another types. At the present moment, it is difficult for me to decide with firm confidence the systematical position of these types. Some of the types must be separated in a future from the species as good different species or subspecies and some must be retained in the species as varieties.

A List of Collection Numbers and Collection Data

- QM7: Near Nakayama-Tunnel in Saigo-cho, Oki Island. 28-X-1976. J. AOKI & H. HARADA.
- JA18: Tanashi-shi, Tokyo. 25-I-1957. J. AOKI.
- JA22: Shinjuku-gyoen, Tokyo. 23-II-1957. J. AOKI.
- JA26: Kogesawa of Mt. Takao, Tokyo. 29-IV-1957. J. AOKI.
- JA28: Same as above.
- JA49: Shiraishi in Kitagama-mura, Miyazaki-ken. 24-X-1957. R. KANO. (J. AOKI).
- JA59 & JA60: Hachijo Airport, Hachijo Island. 25-I-1958. K. KANEKO (J. AOKI).
- JA85: Minobu, Yamanashi-ken. 10-IV-1958.
- JA90: Ogawa in Aikawa-cho, Sado Island. 19-IV-1958. R. KANO (J. AOKI).
- JA93: Atsushio-Kano-mura, Yama-gun, Fukushima-ken. 10-V-1958. J. AOKI.
- JA109: Shiraishi in Kitagawa-mura, Miyazaki-ken. 12-VI-1958. J. KUGOH (J. AOKI).
- JA145: Shobugahama in Nikko, Tochigi-ken. 17-X-1958. J. KUGOH (J. AOKI).
- JA149: Shirahama-cho, Awa-gun, Chiba-ken. 21-XI-1948. J. KUGOH (J. AOKI).
- JA152: Kamiichigi in Mihama-cho, Mie-ken. 8-I-1959. J. KUGOH (J. AOKI).
- JA153: Naruto-shi, Tokushima-ken. 11-III-1959. J. AOKI.
- JA181: Sarita-cho, Sado Island. 18-V-1959. J. KUGOH (J. AOKI).
- JA182: Ogi-machi, Sado Island. 17-V-1959. J. KUGOH (J. AOKI).
- JA183: Tsubaki in Ryotsu-shi, Sado Island. 21-V-1959. J. KUGOH (J. AOKI).
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摘 要

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 日本産ササラダニ類の分類学的研究. II. ヘソイレコダニ科。

従来, 日本産のヘソイレコダニ科としてはヒメヘソイレコダニ *Rhysotritia arduc* (C.L. KOCH)
 とチビイレコダニ *Microtritia tropica* MÄRKEL の2種が知られるのみであったが, 本報告にお
 いてヨーロッパ原産のカントウチビイレコダニ (新称) *Microtritia minima* BERLESE を関東地
 方から記録し, 更に日本からは知られていなかった *Euphthiracarus* 属の2新種, オキイレコダ
 ニ (新称) *E. foveolatus* sp. n. を隠岐島から, タカハシイレコダニ (新称) *E. takahashii* sp.
 n. を三宅島から記載した。

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